ABSTRACT

An insulated gate semiconductor device includes a first base layer of a first conduction type; a second base layer of a second conduction type formed on a first surface of the first base layer; a source layer of the first conduction type selectively formed in a surface region of the second base layer; a drain layer of the second conduction type formed on a second surface of the first base layer opposite from said first surface; and a gate electrode insulated from the source layer, the first base layer and the second base layer and forming in the ~~first~~ second base layer a channel electrically connecting between the source layer and the ~~second~~ first base layer, wherein ~~the injection efficiency of hole current from said drain layer is 0.27 in maximum~~ the voltage transiently applied to the device is larger than the static breakdown voltage between the source and the drain when a rated current is turned off under a condition, in which condition the device is connected to an inductance load without using a protective circuit.